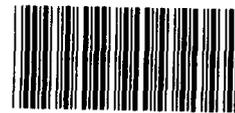


GAO

Testimony



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Correcting Environmental
Problems Facing the
Nuclear Weapons Complex

Statement for the Record
of Victor S. Rezendes
Director, Energy Issues
Resources, Community, and Economic
Development Division

Before the
Committee on Environment and
Public Works
United States Senate



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Mr. Chairman and Members of the Committee:

We are pleased to submit for the record this statement which provides an overview of the Department of Energy's (DOE) efforts to correct the environmental problems facing the nuclear weapons complex. To assist in your deliberations on ways to ensure that DOE's environmental corrective actions are adequately funded and effectively managed, my testimony will cover three major points.

First, the weapons complex faces a wide variety of serious and costly environmental problems. These include the need to upgrade facilities so that they comply with environmental standards, decontaminate and decommission unused facilities, dispose of radioactive wastes that have been stored for decades, and clean up contaminated groundwater and soil. The cost to address these environmental problems is staggering--ranging over \$100 billion. Further, because the full scope of the problems is not known, future costs may be greater as more is learned about the nature and extent of contamination. In the final analysis, some areas of the weapons complex may be irreversibly contaminated and thus may require long-term institutional control.

Second, during the past year, DOE has made some important changes to its organization that should help change its management focus from one that emphasized materials production to one that more clearly focuses on environmental concerns. We have long

pointed out that such a change in focus is needed. DOE must now keep this focus for decades as it works to address the wide-ranging environmental problems of the weapons complex.

And finally, it is generally recognized that the resolution of DOE's environmental problems will require the nation to dedicate substantial resources during a budget deficit era. Therefore, it is imperative that DOE has internal controls in place to ensure that resources are spent effectively in carrying out its environmental and waste management programs. This has not always been the case in the past. More specifically, to successfully carry out these programs, DOE must have an effective management system and internal controls to ensure that

- priorities for funding are identified to address the more serious environmental problems and these problems receive sufficient funding;
- funds allocated to cleanup and waste management are effectively managed and spent; and
- continued emphasis is placed on developing and maintaining a cultural commitment to resolving the environmental problems confronting the weapons complex.

Over the past years, we have issued a series of reports addressing these issues (see attachment I). The remainder of my testimony will address these points in more detail.

DOE'S ENVIRONMENTAL PROBLEMS

In making nuclear weapons, enormous amounts of hazardous and radioactive wastes are generated. Historically, this waste either was disposed of by methods that allowed the waste to enter the environment or was stored until more permanent disposal alternatives were developed. As a result, DOE now faces formidable environmental problems. In this regard, our work over the past several years has described a variety of serious unresolved problems, which include the following:

- More than 3,500 inactive waste sites throughout the complex need to be cleaned up.
- Groundwater at DOE sites is contaminated with hazardous and/or radioactive material, some at levels hundreds to thousands of times above the drinking water standards.
- There are difficulties in maintaining compliance with various environmental laws.

- Delays have occurred in DOE's multibillion dollar effort to put transuranic waste¹ in the Waste Isolation Pilot Plant in New Mexico.

- Some transuranic waste at DOE sites that will not go to the Waste Isolation Pilot Plant.

- There are difficulties in finding a geological repository site for the disposal of high-level waste.

- Some single-shell tanks at Hanford, Washington, have leaked or are suspected of leaking high-level radioactive waste into the environment.

Our analysis of DOE data shows that it may cost over \$100 billion² to address environmental problems of the weapons complex. This includes \$35 billion to \$65 billion to restore the environment at inactive sites, \$30 billion to dispose of radioactive wastes, \$15 billion to decontaminate and decommission unused facilities, and \$3 billion to \$9 billion to bring facilities into compliance with environmental laws.

¹Transuranic waste is material contaminated with man-made elements heavier than uranium. This material is generally radioactively long-lived and toxic.

²These estimates are not of budget quality and should be used only to illustrate the magnitude of the problem. The information was derived from DOE data in 1990 constant dollars.

Because the full magnitude of the environmental problems is not known at many DOE sites, the costs to address these problems are likely to increase. In this regard, DOE is in the early phases of characterizing its environmental problems. Our experience in evaluating the Superfund Program administered by the Environmental Protection Agency (EPA) indicates that the less that is known about the extent of contamination, the more likely it is that the cost estimates will increase as the problem is addressed. Finally, DOE, is beginning to modernize its nuclear weapons complex. It is critical that environmental issues be addressed early in DOE's modernization process to avoid delays and unnecessary cost, and that the full cost implications of modernization decisions be recognized.

DOE'S EFFORTS TO ORGANIZE ITSELF
FOR ADDRESSING ENVIRONMENTAL PROBLEMS

As we have pointed out in our reports and testimonies, the seriousness of DOE's environmental problems was compounded by a management attitude in DOE that emphasized the production of nuclear materials over environmental, safety, and health concerns. During the past year, DOE has acted to change its management focus toward environmental problems. These changes include programmatic restructuring within DOE, the issuance of a 5-year plan for environmental restoration and waste management, and efforts to make contractors more accountable for these problems.

To focus its management on environmental problems, DOE has established an Office of Environmental Restoration and Waste Management to consolidate environmental cleanup, compliance, and waste management activities. It has also restructured its budgeting system to reflect the creation of this office by establishing separate budget accounts for these activities. This reorganization, in our view, provides a framework for establishing the clear line of responsibility needed to carry out the cleanup effort. Its success, however, will depend on many factors, including DOE's continuing commitment over the next several decades to correct environmental problems.

DOE also issued in August 1989 an Environmental Restoration and Waste Management Five-Year Plan, which outlines a multibillion dollar effort over the next 5 years (fiscal years 1991 through 1995) to (1) begin bringing its facilities into compliance with environmental laws, (2) begin cleaning up environmental contamination, and (3) effectively manage the wide variety of radioactive and hazardous wastes that DOE generates. We believe the plan is an important first step in beginning to outline an approach for cleaning up DOE facilities and bringing DOE operations into compliance with environmental laws. DOE plans to update this plan in June 1990.

DOE has also undertaken efforts to make its contractors more accountable for environmental and safety matters. In October 1989

we issued reports and testified that the DOE award fee process needs to be restructured so that it accurately reflects the contractor's performance regarding environmental and safety matters. DOE is restructuring the process by, among other things, having headquarters review and concur in all awards and requiring that environmental, safety, and health matters be weighted at least 51 percent in the evaluation process for awards. These changes, if properly implemented, should increase the contractor's sensitivity to and performance regarding environmental compliance and safety matters.

These actions are important steps in creating an organization and management system with the capability to effectively plan, implement, and oversee environmental corrective actions. We believe it is wise that DOE is taking the time now to better organize itself to manage the environmental restoration and waste management effort. This managerial restructuring will likely continue this year as DOE changes its culture and strives to acquire the necessary expertise to effectively deal with the problems. DOE will also have to maintain these initiatives over the longterm because DOE believes it will take 30 years to clean up environmental contamination at its facilities.

CONCERNS ABOUT DOE EFFORTS TO
ADDRESS ENVIRONMENTAL PROBLEMS

While recognizing the changes DOE has recently made to improve its management, I would like to discuss some overall concerns that we have about DOE's future management of its environmental restoration and waste management effort. As DOE begins to implement an enormously costly program, we believe that, in view of its past problems, it needs to be especially attentive to ensuring over the longterm that

- priorities for funding are identified to address the more serious environmental problems and that these projects receive sufficient funding;
- funds allocated to addressing the problems are effectively managed and spent; and
- continued emphasis is placed on developing and maintaining a cultural commitment to resolve the environmental problems confronting the complex.

Today, DOE does not have a formal system for setting funding priorities that is generally accepted by those affected by this cleanup, such as states where DOE facilities are located. DOE recognizes the importance of a system to set funding priorities for

its environmental problems that includes the views of affected parties. In its 5-year plan, DOE states its intention to develop a priority system that incorporates the views of state and tribal groups, EPA, and the public, with independent technical review by the National Academy of Sciences. According to DOE officials, DOE's objective is to have a new priority system operational, at least on a trial basis, for the fiscal year 1992 budget.

We also believe that in order to develop and maintain a national consensus and commitment, as well as to avoid past problems, DOE must have the necessary internal controls in place to effectively manage and spend funds allocated to correcting environmental problems. In this regard, the level of environmental funding should be commensurate with DOE's ability to ensure that funds are used efficiently for their intended purposes. Adequate DOE oversight is especially important, given the fact that DOE relies heavily on contractors to carry out a large part of its activities.

Shortcomings in DOE's oversight programs have been a continuing management problem. We have issued numerous reports identifying persistent problems with internal and external oversight of DOE's facilities. Similarly, the Secretary of Energy, upon taking office in 1989, determined that DOE's existing oversight system for environmental, safety, and health matters was a failure. More recently, on December 28, 1989, the Secretary of

Energy reported to the President and the Congress that DOE has several material internal control weaknesses that could affect DOE's environmental efforts. These weaknesses include contract management that needs improvements in DOE's oversight of contracts to ensure the work performed is acceptable and in compliance with laws and regulations. The Secretary also reported to the President that DOE's programs are being severely affected by staffing inadequacies in critical areas such as environmental programs and contract management.

Finally, we believe DOE needs to continue to develop and, once established, maintain a culture committed to resolving the environmental problems that confront the weapons complex. For decades, DOE and its predecessor agencies worked under a culture that stressed production. The Secretary of Energy, as part of his new management focus, is attempting to change this culture and increase DOE's sensitivity to environmental matters. However, such changes must filter down through all levels of DOE, including its contractors. Once DOE achieves this cultural commitment to environmental matters, DOE management will have to maintain it throughout the 3 decades that the current Secretary has set as a goal for cleaning up the complex.

SUMMARY

In summary, the environmental problems facing DOE's nuclear weapons complex are enormous and will take decades to resolve. Widespread environmental contamination exists at many DOE sites and the full extent of the environmental problems is not known.

During the past year, DOE has taken a number of steps to better deal with these problems, including an organizational restructuring to better focus on environmental problems. Such actions are important as DOE develops an organization and management system with the capability to effectively plan, implement, and oversee corrective actions. We believe it is wise that DOE takes the time now to properly organize itself to manage the long-term program needed to address the many environmental problems it faces.

To successfully carry out its environmental restoration and waste management programs, DOE must have an effective management system to ensure that the most serious environmental problems are identified and adequately funded and that funds allocated to correcting environmental problems are effectively spent. Furthermore, the seriousness and long-term nature of the task ahead makes continued oversight by DOE necessary to ensure that a long-term commitment to acceptable environmental practices is maintained within the nuclear weapons complex. We will continue our

assessments of DOE's activities and plan to focus our attention during the coming year on evaluating DOE's management systems, including its oversight of contractor operations.

GAO REPORTS RELATED TO
ENVIRONMENTAL ASPECTS OF DOE OPERATIONS

Need for Improved Responsiveness to Problems at DOE Sites
(GAO/RCED-90-101, Mar. 1990).

Efforts to Improve DOE's Management of the Nuclear Weapons Complex
(GAO/T-RCED-90-64, Mar. 1990).

GAO's Views on DOE's 1991 Budget for Addressing Problems at the Nuclear Weapons Complex (GAO/T-RCED-90-33, Mar. 1990).

GAO's Views on DOE's Environmental Restoration and Waste Management Five-Year Plan (GAO/T-RCED-90-16, Nov. 1989).

DOE's Award Fees at Rocky Flats Do Not Adequately Reflect ES&H Problems (GAO/RCED-90-47, Oct. 1989).

Policy Implications of Funding DOE's K-Reactor Cooling Tower Project (GAO/RCED-89-212, Sept. 1989).

DOE's Management of Single-Shell Tanks at Hanford, Washington
(GAO/RCED-89-157, July 1989).

Environmental Problems in the Nuclear Weapons Complex (GAO/T-RCED-89-18, Apr. 1989).

Problems Associated With DOE's Inactive Waste Sites (GAO/RCED-88-169, Aug. 1988).

Dealing With Problems in the Nuclear Defense Complex Expected to Cost Over \$100 Billion (GAO/RCED-88-197BR, July 1988).

Environmental Funding: DOE Needs to Better Identify Funds for Hazardous Waste Compliance (GAO/RCED-88-62, Dec. 1987).

Environmental, Safety, and Health Oversight of DOE's Operations
(GAO/T-RCED-87-12, Mar. 1987).

Environmental, Safety, and Health Aspects of DOE's Nuclear Defense Complex (GAO/T-RCED-87-4, Mar. 1987).

Nuclear Waste: Unresolved Issues Concerning Hanford's Waste Management Practices (GAO/RCED-87-30, Nov. 1986).

Nuclear Energy: Environmental Issues at DOE's Nuclear Defense Facilities (GAO/RCED-86-192, Sept. 1986).